International Project on Ecosystem Essential Ocean Variables in the Southern Ocean

Public summary

Project: Identifying Ecosystem Essential Ocean Variables for measuring changes in marine ecosystems

SCOR, SCAR, APECS, and IMBER are working together to review potential Ecosystem Essential Ocean Variables (eEOVs) that could be used in the Southern Ocean. This initiative is being led by the Southern Ocean Observing System (SOOS) and the results and outputs will be used directly in the development of an internationally accepted, quantified strategy for biological observations of the Southern Ocean. Changes in ocean climate and acidification could result in altered dynamics of marine ecosystems which, in turn, will need to be considered in decisions about how to maintain ecosystem health, services, and robustness/resilience to future change. Sustainable marine ecosystem management will require indicators of the underlying status of marine ecosystems, and new means to monitor such indicators. This program of work, including an international expert workshop, will bring together experts in observing and assessing change in marine ecosystems to undertake and publish a series of reviews to underpin the development of marine observing systems, including SOOS and the Global Ocean Observing System (GOOS).

Objectives

Substantially progress identification of essential ecosystem ocean variables (eEOVs), particularly for use in the Southern Ocean, by:

1. Summarising current knowledge on biodiversity indicators and how they may inform the development of indicators of marine ecosystem structure, function and dynamics
2. Identifying indices that could be used to detect and track change in the structure, function and dynamics of marine ecosystems.
3. Determining the Ecosystem Essential Ocean Variables (eEOVs) that would need to be monitored on a sustained basis to produce the composite indices identified in the second objective.
4. Providing advice to policymakers on the technical development and, where possible, requirements for measuring these eEOVs.
5. Advancing the implementation of eEOVs in the Southern Ocean by

1. Bringing together groups and projects presently active in ecological observing of the Southern Ocean to identify a common, integrated workplan for Southern Ocean ecosystem monitoring and to have these researchers contribute to the development of eEOVs for the region
2. Identifying current and planned activities that could utilise the identified eEOVs.

Partners

SCOR, SCAR, APECS and IMBER will work together in selecting the planning committee, and to convene the workshop, disseminate the results, and use the results for follow-on activities.

In addition, the partners have the following roles:

SCOR is a founding co-sponsor of the Southern Ocean Observing System (SOOS). It will manage the funds and will lead in providing administrative support to the activity. (*Contact: Ed Urban*)

SCAR is a founding co-sponsor of the SOOS. It provides an important link to the Antarctic scientific community and the Antarctic Treaty System. (*Contact: Mike Sparrow*)

IMBER will assist with publication of the results of the workshop. (*Contact: Eileen Hofmann*)

APECS represents the interests of the next generation of polar oceanographers. (*Contact: Gerlis Fugmann*)

Project Committee

Members

Andrew Constable (AAD, ACE CRC)

Dan Costa (UCSC)

Oscar Schofield (Rutgers)

Louise Newman (SOOS)

Tosca Ballerini (APECS representative)

Ex-officio

Ed Urban (SCOR)

Mike Sparrow (SCAR)

Eileen Hofmann (IMBER)

Gerlis Fugmann (APECS)

Other members of the committee are will be co-opted from the leading experts in each of the review groups, including representation from developing countries and countries with economies in transition.

Tasks

The Planning Committee will

1. Establish expert groups to undertake reviews
2. Encourage preliminary analyses and the development of methodologies that could be used to help identify eEOVs
3. Encourage linkages between established research groups and young researchers, and between scientists in developed and developing countries
4. Distribute information about the work program, including the workshop, through the ICSU, SCOR, APECS, SCAR, and IMBER networks, with a particular emphasis on enabling participation of scientists from developing countries and countries with economies in transition, and in developing early-career scientists
5. Facilitate the workshop.

The planning committee will meet virtually to coordinate the reviews and to develop the workshop program and structure, and to identify invitees to the workshop.

Background & Justification

Indicators of marine ecosystem status have been sought for the past two decades, primarily to better understand the impacts of fisheries and for determining when fishing practices need to be changed to maintain or restore ecosystem health. Until recently, trends in fish populations were thought to be primarily driven by fishing activities, rather than by changes at lower trophic levels or other parts of the food web. However, upper levels of ecosystems are now known to be affected by changes occurring at lower levels, beyond the impact of fishing. Information about changes in the function and dynamics of marine ecosystems, at all levels, is needed, in addition to knowledge on biodiversity, when making decisions about how to maintain marine ecosystem health and services, and their resilience to future change.

There is a growing recognition of the need to measure the background state of ecosystems to facilitate interpretation of indicators from both fisheries and a changing climate. The need for new indicators has been identified by the UN World Oceans Assessment and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). However, development of such indicators is not far advanced, particularly for whole ecosystems. Many of the indicators currently available for marine ecosystems relate to the physical environment or, if for biology, only particular aspects of the ecosystem, most notably on the effects of fishing (e.g., size distributions of organisms, numbers at different trophic levels, total biomass in a region). Most indicators have been derived opportunistically from available datasets, so there is a significant need to specify fit-for-purpose indicators and then to specify the observations needed to monitor these indicators. These observations would be the foundation for determining essential variables to monitor.

Ocean observing systems are expanding worldwide (e.g., the Southern Ocean Observing System www.soos.aq) and need assistance to identify the biological and ecological variables that they should measure. Such variables build on the concept of Essential Ocean Variables for sustained monitoring of the ocean that are a part of the Framework for Ocean Observing developed out of the OceanObs'09 conference, which has been adopted by the Global Ocean Observing System (GOOS) and is being further developed as part of the EC-funded (2012-2014) GEOSS interoperability for Weather, Ocean and Water project. Essential variables of the physical marine system are well developed, and can be readily interpreted and used in the development and application of models of the physical systems. In comparison, Ecosystem Essential Ocean Variables (eEOVs) that indicate not only the status and change in marine habitats and the biotic components of the ecosystem, but also the function and dynamics of the ecosystem, need to be developed in order to establish research and monitoring programs to parallel monitoring of physical parameters (e.g., temperature, salinity). The readiness of eEOV observations will need to be assessed in order to design research efforts aimed at creating and using new eEOVs. Tools are now available to evaluate the efficacy of indicators and different field sampling designs (spatial and temporal sampling programs) and it is timely to begin to apply such methods to evaluate case studies of different marine ecosystems.

The best mechanism to rapidly progress this work will be to assemble experts to undertake reviews and then to convene a workshop for general participation by the scientific and marine policy community to identify a suite of eEOVs that need to be measured to assess status and change in whole marine ecosystems. This project will gather experts from around the world to participate in the workshop, representing all major aspects of Southern Ocean marine biology to identify appropriate and measurable eEOVs. The workshop will particularly focus on the Southern Ocean and will contribute to the work of SCOR and SCAR in developing the Southern Ocean Observing System. Such a focus will make the workshop objectives more achievable, yet the workshop results could provide a model for other ocean regions.

eEOVs need to be measured relatively easily and cost-effectively in order to achieve coverage in space and time to signal how ecosystems are changing. They need to encompass key biological attributes of marine ecosystems that underpin structure, function, and dynamics. Their identification will require the involvement of experts ranging from observations of key types of marine organisms to those with a theoretical understanding of the dynamics of ecosystems and the key drivers of their structure and function. The proposed workshop will assemble experts in primary production, zooplankton, birds, fish, marine mammals, ecosystems, and observation methods and systems. Scientists from developing nations will be included in the workshop committee and review groups because of their proximity and experience in many important ecosystems, providing for opportunities to build capacity on this topic. Experts from developing countries in the ICSU Latin America and Caribbean region and the ICSU Asia and Pacific region have already been involved in discussions related to the workshop. Workshop planners will consult with each of the ICSU regional offices to identify experts from their regions. The Association of Polar Early Career Scientists (APECS) will also be involved in planning the workshop, to ensure good participation of early-career scientists.

Participation is being sought from relevant international projects and organizations, such as the Integrated Marine Biogeochemistry and Ecosystem Research (IMBER) project (which resulted, in part, from a previous ICSU grant), the Southern Ocean Observing System (SOOS), the Global Ocean Observing System (GOOS), SCAR and CCAMLR. IMBER sponsors the Integrating Climate and Ecosystem Dynamics (ICED) project that focuses on the Southern Ocean, but also projects in the Arctic, and tropical Pacific, Atlantic, and Indian oceans. Workshop planners will also seek participation from the Marine Working Group (formerly the Arctic Ocean Science Board) of the International Arctic Science Committee, particularly for help in identifying experts who could contribute case studies from the Arctic Ocean and participate in the workshop.

This project will help create new knowledge that will be useful for sustainable development of ocean systems, which is a key goal for ICSU, SCOR, SCAR and CCAMLR. SCOR has provided leadership in developing indicators through its Working Group 119 on Quantitative Ecosystem Indicators for Fisheries Management, which has led to the ongoing Indicators for the Seas (IndiSeas) project. A common difficulty with assessing change in biological components of marine ecosystems is that a sufficiently long time series of measurements is required in order to appropriately differentiate change from natural variability. Three SCOR working groups have compiled and analyzed time series of different organisms, which will be important sources of indicators: WG 98 on Worldwide Large-scale Fluctuations of Sardine and Anchovy Populations, WG 125 on Global Comparisons of Zooplankton Time Series, and WG 137 on Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time Series Observation (ongoing).

Intended outputs & impacts

This project aims to identify eEOVs which would be the basis for key biological observations of productivity, structure, function, and dynamics of marine ecosystems. The specification of eEOVs is needed for effective implementation of the Southern Ocean Observing System, the Global Ocean Observing System, and IMBER programs on the biogeochemistry and ecosystem dynamics of the ocean, and would contribute to the UN World Oceans Assessment, the IPCC process, the work of the Antarctic Treaty System, and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Outcomes of the workshop will include papers for peer-reviewed scientific journals and a marine policy journal that would describe next steps, and would also result in an implementation plan that will be submitted to SCOR, SCAR, and other organizations as proposals for the next phase of development work.

The project is both scientifically compelling and relevant to ICSU and participating organizations. It is on the leading edge of the zone where ocean science and policy interact. The workshop would contribute to several of the priority themes in the Planning and Coordinating Research topic in the current ICSU Strategic Plan, including Earth System Sustainability Research and Global Environmental Change, Global Earth Observing Systems, Polar Research, and Ecosystem Change and Society.

The project will result in articles in peer-reviewed natural science publications and a plan for follow-on activities, which could be submitted in the form of a SCOR working group proposal, an activity of the Southern Ocean Observing System, a project of SCAR, etc. The project will strengthen interactions among SCOR, SCAR, and IMBER, and APECS involvement will help stimulate involvement of early-career scientists in these organizations. The audience for the publications will be the ocean monitoring and research communities. An additional publication will be prepared for

the marine policy literature, summarising the importance, feasibility, and workplan for consolidating ecosystem essential ocean variables, along with the importance to policymakers of regular measurements of those variables for estimating change. Lastly, the background material contributing to the reviews will be assembled into publicly available Web-based documentation to help communicate more broadly to the potential users the detailed information available. The project and its products will help ICSU and all the participating organizations and projects make important contributions to the Global Ocean Observing System and the Southern Ocean Observing System.

Reviews in preparation for the workshop

1. Available candidate eEOVs and the types of data needed for summary eEOVs,
2. Case studies of regional change in which candidate eEOVs can be evaluated based on existing data and knowledge,
3. Tools and methodologies that could be used to assess eEOVs from field data as well as for estimating rates of change,
4. Methods for communicating eEOVs to the scientific community and policy makers, and
5. Integration of activities to observe change in Southern Ocean ecosystems.

These reviews will contribute to the final publications, and relevant information from the reviews will be assembled into publicly available Web-based documentation.

Outputs of the project

The primary outputs of this project will be:

1. Peer-reviewed natural science publications
2. A plan for follow-on activities, a SCOR working group proposal, an activity of the Southern Ocean Observing System, a project of SCAR, etc.
3. Publication for the marine policy literature on the importance, feasibility and workplan for consolidating ecosystem essential ocean variablesimportance to policymakers of regular measurements of those variables for estimating change.
4. Background materials made publicly available (SOKI) to help broader communication
5. Linkages & coordination of Southern Ocean ecosystem observing activities.

The summary articles from the workshop in a peer-reviewed journal will give visibility to the topic, to ICSU, and to the participating organizations. The project will feed its results immediately into relevant policy forums, as well as to use the results as the foundation for proposals (e.g., for a SCOR working group) and other mechanisms to follow-up on the workshop.

Timetable

Year (date)	Event/milestone
Dec 2013	Invitations to participate in workplan
Jan-March 2014	Compile metadata on eEOVs, case studies and options for evaluation, taking account of activities in GOOS, IndiSeas and other projects on observing marine ecosystems
March 2014	Workshop to synthesise metadata into reviews and to facilitate coordination of ecosystem observing activities in the Southern Ocean
April-May 2014	Progress reviews to manuscripts
June 2014	Submit report to SCAR, SCOR, IMBER, ICSU, including participation in Future Earth conference in June, to receive feedback on outcomes.
July 2014	Finalise manuscripts for submission

Workshop Location, Timing and Participants

Location

Institute of Marine and Coastal Science, Rutgers University, New Jersey, USA

Dates

4 days, 18-21 March 2014

Workshop themes and structure

The proposed workshop will be organised along five themes:

1. Candidate eEOVs,
2. Regional case studies,
3. Methodologies,
4. Communication, and
5. Integration of activities observing change in Southern Ocean ecosystems.

In addition, the workshop will aim to summarise the outcomes of this work along with identifying the key gaps and directions for consolidating eEOVs for general use.

The workshop would start with presentations of each of these reviews, including case studies for different regions of the Southern Ocean and a few other major marine ecosystems around the world (e.g., Arctic systems). Discussion will continue (in plenary or break-out groups) to identify which case studies have sufficient

development of structure, function, and the drivers of change to use as case studies for assessing candidate eEOVs. The workshop will then consider the tools that need to be used to evaluate candidate eEOVs in terms of field sampling and the costs and benefits of the measurement of those eEOVs for estimating whether the structure and function of an ecosystem has changed. Preparatory work in advance of the workshop will be essential.

Workshop Participants

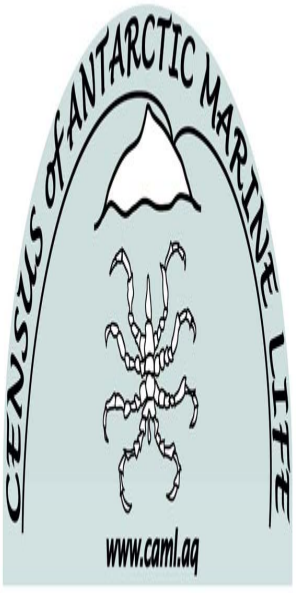
ICSU funds will provide support to as many participants as possible. Other funds are available for specific support. Potential participants are encouraged to provide as much of their own support to attend the workshop as possible in order to enable a broad participation across stakeholders. Scientists from developing nations will be included in the leadership groups of each review, providing for opportunities to build capacity on this topic, and will be provided funds for attending the workshop.

Experts ranging from observers of key marine organisms to those with a theoretical understanding of the dynamics of ecosystems and the key drivers of their structure and function will be involved in the reviews. Not all experts will be required at the workshop. The workshop will assemble experts in primary production, zooplankton, birds, fish, marine mammals, ecosystems, observational methods and systems ecology, and will work from the recommendations outlined in the reviews.

Workshop Sponsorship

RUTGERS
UNIVERSITY

ICSU
International Council for Science



Literature references

Relevant documents

Attachment	Description
ICSU 2012 eEOV Workshop.pdf	Proposal to ICSU 2012

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable , Louise Newman
Page last modified: Jan 14, 2014 11:00

01 Candidate eEOVs

DRAFT

Icon

This page is still under construction

Purpose of Review

Review 1 on Candidate eEOVs aims to collate candidate variables for consideration as ecosystem Essential Ocean Variables. Such variables should be measurable quantities (although they may require new technologies to do so) and should be necessary for quantifying

1. key habitat features,
2. status and trends of primary biological traits in an ecosystem (functional groups, keystone species and the like), and/or
3. indicators of status and trends in ecosystems.

A template is provided to describe the following attributes of candidate variables:

1. Variable name (title of page)
2. Summary description & purpose
3. Dependent quantities or covariates (i.e. other variables that may need to be measured at the same time)
4. Methods for measurement and analysis (standard methods are desirable)
5. State of readiness
6. Justification
7. Utility in Indicators
8. References

Review Expert Groups

Submissions of metadata/summaries on candidate eEOVs and indicators are sought on 6 topics (Ecosystems, Fish and Pelagic Taxa, Benthos, Marine Mammals and Birds, Microbial Ecology and Biogeochemistry, Zooplankton). An Expert Group has been developed to provide leadership in developing descriptions of candidate eEOVs. Groups in each topic are asked to consider eEOVs that reflect habitats, and status & trends of the biota in their topic.

Summary outcomes

Example: candidate eEOV template

Creating a new candidate eEOV?
If you are creating a new candidate 'ecosystem Essential Ocean Variable' page for the wiki please use the 'eEOV candidate' template.The title of the page should be the title of your candidate eEOV

Under each heading is a list of the basic information (**in red italics**) that should be included in that section. Delete the red italics when finished.

Please see other finalised ecosystem Essential Ocean Variables on this wiki for examples of how to populate this outline (if you are unsure then please contact other reviewers or Andrew Constable / Dan Costa for assistance).

DRAFT

Icon

This page is still under development

Summary description & Purpose

A brief description (3-4 sentences or dot points) of the purpose of this eEOV, including the expected units of measurements.

Justification

Provide a justification of the variable,including references to its development.

Utility in Indicators

Provide an explanation about how this variable would be used in indicators, cross-referencing as needed to descriptions of the relevant indicators in the Indicators space within this wiki.

Scales of measurements

Note the spatial and temporal scales at which measurements need to be taken to satisfy the purposes described above (the scales of measurements may need to differ for each purpose)

Dependent quantities or covariates

Describe other variables that may need to be measured at the same time. Insert NA if not applicable.

Methods for measurement and analysis (standard methods are desirable)

List the preferable standard method or methods to measure the eEOV. Links to the standard method descriptions (see Methods space within the wiki) are preferable to detailing them here. Also, any notes for the correct implementation of measurements of these variables would be useful.

State of readiness

A summary of the state-of-readiness of this variable is needed here. This will include whether it has been evaluated and determined to be fit-for-purpose and that the methods for obtaining these measurements have been standardised.

Problems to consider

Any problems of note with the use of this variable.

Programs or activities where currently used

Names and brief details (or hyperlinks) of programs or activities where this eEOV is used, including any activities in the Southern Ocean

Associated links

Hyperlinks to organisations, databases, webportals, and ID books, that are associated with this variable, if appropriate.

People

Relevant experts in developing this candidate variable can be included here.

References

A list of references referred to on this page.

Background reading

Other references that would be useful to read in regard to the method referred to on this page.

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable

Last modified on: Dec 11, 2013 17:17

Reviewers

The macro included in this section of the template will automatically generate a list of reviewers who have viewed this page, and made comments.

Additional notes may include: personal communication, email feedback

Comment(s) made by: (see comments below)

02 Case Studies

DRAFT

Icon

This page is still under construction

Purpose of Review

Review 2 on Case Studies of Observing Change aims to collate case studies of regional changes in marine ecosystems, the indicators used to summarise and signal change, what variables were used to identify the changes and what measurements have been identified for those regions as being important for measuring future change. These case studies will provide a context for determining which of the candidate variables are essential for contributing to indicators of ecosystem changes in the future. General experience will also be reviewed to summarise the variables essential for underpinning key indicators of change.

For each case study, a template is provided to **summarise** (with references) the following areas:

1. The main attributes of the ecosystem, including the attributes of habitats and the nature of the foodwebs in the region
2. Primary ecosystem changes observed in the region and the drivers of those changes
3. Key variables contributing to the identification of change
4. Key gaps in variables and indicators of change that would be desirable to be filled in future
5. Summary conclusions
    1. expected future drivers of change
    2. when available, prospective indicators of change
    3. when identified, essential variables required for monitoring
6. References

Review teams

Teams are being initiated for the following regions with open invitations to submit metadata/summaries of case studies where change in biota, foodwebs, assemblages and/or ecosystems have been documented. Members of the community are being approached to begin assembling these summaries with the aim for networks of experts within the scientific community to add to these summaries. The following team is being approached to provide leadership in developing case studies, taking account of work that has already been undertaken. Groups in each region are asked to consider how change has been documented and what indicators were used to report change. Some experts have been added to more than one region. At present, there is no overlap between experts in the development of case studies with those developing candidate eEOVs. However, this should not preclude experts participating in each of the different reviews.

*[*indicates attendance at workshop]*

Region	Experts
Southern Ocean	*Andrew Constable (Australia), *Eileen Hofmann (USA), Eugene Murphy (UK), Javier Arata (Chile), Matt Pinkerton (NZ), George Watters (USA), Christoph Barbraud (France), Azwianewi Makhado (South Africa)
North Pacific, regional seas, Arctic	Pat Livingston (USA), Xianshi Jin (China), *Francisco Chavez (USA), Sanae Chiba (Japan)
South Pacific	*Sergio Neira (Chile), David Smith (Australia)
North Atlantic, regional seas, Arctic	Jason Link (USA), *Philippe Cury (France), *Eileen Hofmann (USA)
South Atlantic	Azwianewi Makhado (South Africa)
Indian Ocean	*Parli Bhaskar (India), Henri Weimerskirch (France), Mitsuo Fukuchi (Japan), Christoph Barbraud (France)
General	Yunne Shin (France, IndiSeas)

Summary outcomes

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable , Louise Newman

Last modified on: Feb 18, 2014 14:52

Example: case study template

Creating a new regional case study?

If you are creating a new regional case study on 'ecosystem Essential Ocean Variables' for the wiki please use the 'eEOV regional case study' template.The title of the page should be the title of your regional case study

Under each heading is a list of the basic information (**in red italics**) that should be included in that section. Delete the red italics when finished.

Please see other finalised regional case studies for the review of case studies on ecosystem change on this wiki for examples of how to populate this outline (if you are unsure then please contact other reviewers or Andrew Constable / Dan Costa for assistance).

DRAFT

Icon

This page is still under development

The main attributes of the ecosystem

A summary of the attributes of habitats and the nature of the foodwebs in the region. Include relevant references.

Primary ecosystem changes and their drivers

Summarise the primary observed ecosystem changes in the region and the drivers of those changes. Also, include the indicators used to show the changes.

Key observed variables

Describe the measured variables that were used to identify the changes, including any significant analyses in which those data were used.

Key gaps

Summarise any signficant gaps in data sets and/or indicators that would significantly assist in identifying change, particularly into the future.

Summary conclusions

Expected future drivers of change

Summarise the relative importance of future drivers of change in the ecosystem of the region._

Prospective indicators of change

If any indicators have been determined to be used to indicate change in the future, list them with the rationale for their use._

Essential variables required for monitoring

If any variables have been identified for future monitoring, list them with the rationale for their monitoring._

Associated links

Hyperlinks to organisations, databases, webportals, and ID books, that are associated with this regional assessment.

People

Relevant experts.

References

A list of references referred to on this page.

Background reading

Other references that would be useful to read in regard to this case study.

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable

Last modified on: Dec 11, 2013 17:18

Reviewers

The macro included in this section of the template will automatically generate a list of reviewers who have viewed this page, and made comments.

Additional notes may include: personal communication, email feedback

Comment(s) made by: (see comments below)

03 Approaches to evaluate eEOVs

DRAFT

Icon

This page is still under construction

Purpose of Review

This group is being invited to contribute to reviewing approaches and methodologies for evaluating the efficacy of candidate eEOVs. This work will not be exclusive to this group but will also involve as far as possible all the experts involved in the other reviews. The group below will develop model scenarios for these evaluations, drawing upon the case studies.

Review team

[indicates attendance at workshop]*

Name	Country	Expertise
Julia Blanchard	UK	IndiSeas, QUEST-Fish
*Andrew Constable	Australia	Ecosystems, sampling design, pelagic and benthic sampling, CCAMLR Ecosystem Monitoring Program, SOOS, Southern Ocean Sentinel (IMBER ICED)
*Dan Costa	USA	SOOS
*Philippe Cury	France	SCOR WG 119
*Katja Fennel	Canada	Food web and biogeochemical modeling, biological data assimilation techniques
Beth Fulton	Australia	Ecosystem modelling & synthesis, ecosystem indicators
*Eileen Hofmann	USA	IMBER
Simon Jennings	UK	Marine ecosystems & fisheries ecology and management, indicators
Jason Link	USA	Indicators
Olivier Maury	France	Ecosystems modelling, IMBER CLIOTOP project
Eugene Murphy	UK	IMBER ICED
David Smith	Australia	Marine ecosystems, fisheries ecology and management, indicators

Yunne Shin France IndiSeas, OSMOSE modelling

Summary outcomes

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable , Louise Newman

Last modified on: Feb 18, 2014 14:56

04 Communicating eEOVs

DRAFT

Icon

This page is still under construction

Purpose of Review

This group is being invited to contribute to reviewing approaches and tools for summarising results of eEOVs and, where appropriate, for communicating those results to the scientific community and policy makers. This work will not be exclusive to this group but will also involve as far as possible all the experts involved in the other reviews.

Review team

** indicates attendance at workshop*

Name	Country	Expertise
Julia Blanchard	UK	QUEST-Fish
*Andrew Constable	Australia	CCAMLR Ecosystem Monitoring Program, SOOS, Southern Ocean Sentinel (IMBER ICED)
*Dan Costa	USA	SOOS
*Philippe Cury	France	SCOR WG 119, European indicators for ecosystem approach to fisheries.
Beth Fulton	Australia	Ecosystem modelling & synthesis
*Eileen Hofmann	USA	IMBER
Simon Jennings	UK	Marine ecosystems & fisheries ecology and management
Olivier Maury	France	IMBER CLIOTOP
Eugene Murphy	UK	IMBER ICED
Todd O'Brien	USA	SCOR WG 125, 137, data management & synthesis
David Smith	Australia	Marine ecosystems, fisheries ecology and management
Yunne Shin	France	IndiSeas, OSMOSE modelling

Summary outcomes

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable , Louise Newman

Last modified on: Feb 18, 2014 14:59

05 Ecosystem observing in the Southern Ocean

DRAFT

Icon

This page is still under construction

Purpose of Review

This group will summarise current activities, groups and projects observing Southern Ocean ecosystems. These activities may be national, multinational or internationally co-ordinated (e.g. through SCAR) programs.

Review team

Members of the Southern Ocean ecosystem scientific community are being approached to begin assembling these summaries using the template provided with the aim for networks of experts within the scientific community to add to these summaries. The following experts are being approached to initiate these summaries.
** indicates attendance at workshop*

Name	Country	Expertise
*Eileen Hofmann	USA	IMBER
Eugene Murphy	UK	IMBER ICED
*Tim Moltmann	Australia	Australian Integrated Marine Observing System (IMOS)
Marc Eleaume	France	Dumont d'Urville recurrent measurements feasibility programme
Graham Hosie	Australia	Chief Officer, SCAR Standing Group on Life Sciences
*Julian Gutt	Germany	SCAR Program on Antarctic Thresholds - Ecosystem Resilience and Adaptation (AnT-ERA)
Philippe Koubbi	France	SO-CPR
*Huw Griffiths	UK	SCAR Program on State of the Antarctic Ecosystem (AntEco)
Richard Bellarby	Norway	Co-convenor, SCAR Ocean Acidification Action Group

*Mark Hindell	Australia	SCAR Expert Group on Birds And Marine Mammals
*Keith Ried	CCAMLR	CCAMLR Ecosystem Monitoring Program
Colin Southwell	Australia	CCAMLR Status and Trend Assessment of Predator Populations
*Jon Watkins	UK	CCAMLR Acoustic Survey and Assessment Methods
*Monica Muelbert	Brazil	PROANTAR, MEOPs, AES hot spots
*Greg Mitchell	USA	International Ocean Colour Coordinating Group
Kevin Arrigo	USA	International Ocean Colour Coordinating Group - Working Group on Polar Seas Ocean Colour Remote Sensing

Summary outcomes

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable , Louise Newman

Last modified on: Feb 18, 2014 15:12

Example: Southern Ocean ecosystem activity template

Creating a new Southern Ocean ecosystem activity?

If you are creating a new Southern Ocean ecosystem activity for the wiki please use the 'eEOV Southern Ocean ecosystem activity' template.The title of the page should be a unique title of the activity

Under each heading is a list of the basic information (**in red italics**) that should be included in that section. Delete the red italics when finished.

Please see other finalised descriptions of Southern Ocean activities for the review of current activities observing Southern Ocean ecosystems on this wiki for examples of how to populate this outline (if you are unsure then please contact other reviewers or Andrew Constable / Dan Costa for assistance).

DRAFT

Icon

This page is still under development

Aims/objectives of the observing activity

A summary of the aims and objectives of the activity observing Southern Ocean habitats, species and/or ecosystems.

Period of activity

Input the first and last year of the activity or, in the case of current activities, the projected last year of the activity (add 'ongoing' if indefinite)

Primary location of these activities

Describe the location where these activities are occurring, either specifically or in a general region. Include a map of the locations if possible.

Key observed variables, sampling design and frequency

Summarise the measured variables, the sampling design and how often they would be measured.

Leading agencies and/or organisations

List of key national, multinational or international agencies and/or organisations leading this activity. Also include, if appropriate, the sources of funding.

Associated links

Hyperlinks to web sites, organisations, databases, webportals, and ID books, that are associated with this work.

People

Relevant experts involved with this work, including areas of expertise.

References

A list of references referred to on this page.

Background reading

Other references that would be useful to read in regard to this activity.

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable

Last modified on: Dec 11, 2013 17:19

Reviewers

The macro included in this section of the template will automatically generate a list of reviewers who have viewed this page, and made comments.

Additional notes may include: personal communication, email feedback

Comment(s) made by: (see comments below)

06 Synthesis

DRAFT

Icon

This page is still under construction

In preparation for the workshop, this page will develop a synthesis across the four review groups in preparation for a publication following the workshop. The synthesis will be coordinated by the core planning team.

This synthesis could include a summary table of candidate eEOVs. A possible format is:

Candidate	Indicator of	Justification	International links	Notional state of readiness
example candidate	*indicator of productivity, habitat quality, ocean chemistry etc.*	*key references, comments on how well the candidate meets theoretical criteria etc.*	*e.g. programs or activities where this variable is currently used*	
....	....	....	....	....

Citation

Please cite this page as:

SOKI Wiki

Page contributors: Andrew Constable , Jess Melbourne-Thomas

Last modified on: Feb 20, 2014 14:26